

UL TEST REPORT AND PROCEDURE

Standard:	ANSI/AAMI ES60601-1:2005, 3rd ed. (Medical Electrical Equipment - Part 1: General Requirements for Basic Safety and Essential Performance) CAN/CSA-C22.2 No. 60601-1 (2008) (Medical Electrical Equipment - Part 1: General Requirements for Basic Safety and Essential Performance)
Certification Type:	Component Recognition
CCN:	QQHM2, QQHM8 (Power Supplies, Medical and Dental)
Product:	Power Supply
Model:	M3-MMMM-FFF-OO, M4-MMMM-FFF-OO, M5-MMMM-FFF-OO (Where MM can be a combination of R, S, T, U or blank and a number 1-11, F, G, Z or blank; where F can be a combination of a letter E,F,M or blank an any number 3-5 or blank: where O can be any number 0-9; dashes optional in model designation, "-" provided optionally)
Rating:	Input rated: M3-MMMM-FFF-OO: 100-240 Vac, 50/60 Hz, 3.4 A M4-MMMM-FFF-OO: 100-240 Vac, 50/60 Hz, 5.5 A M5-MMMM-FFF-OO: 100-240 Vac, 50/60 Hz, 7.3 A Output rated: See model differences for module details.
Applicant Name and Address:	XP POWER LLC SUITE 150 1241 E DYER RD SANTA ANA CA 92705 UNITED STATES

This is to certify that representative samples of the products covered by this Test Report have been investigated in accordance with the above referenced Standards. The products have been found to comply with the requirements covering the category and the products are judged to be eligible for Follow-Up Service under the indicated Test Procedure. The manufacturer is authorized to use the UL Mark on such products which comply with this Test Report and any other applicable requirements of UL LLC ('UL') in accordance with the Follow-Up Service Agreement. Only those products which properly bear the UL Mark are considered as being covered by UL's Follow-Up Service under the indicated Test Procedure.

The applicant is authorized to reproduce the referenced Test Report provided it is reproduced in its entirety.

UL authorizes the applicant to reproduce the latest pages of the referenced Test Report consisting of the first page of the Specific Technical Criteria through to the end of the Conditions of Acceptability.

Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL.

Prepared by: Linus Park

Reviewed by: Michael J. Howell

Supporting Documentation

The following documents located at the beginning of this Procedure supplement the requirements of this Test Report:

- A. Authorization - The Authorization page may include additional Factory Identification Code markings.
- B. Generic Inspection Instructions -
 - i. Part AC details important information which may be applicable to products covered by this Procedure. Products described in this Test Report must comply with any applicable items listed unless otherwise stated in the body of this Test Report.
 - ii. Part AE details any requirements which may be applicable to all products covered by this Procedure. Products described in this Test Report must comply with any applicable items listed unless otherwise stated in the body of each Test Report.
 - iii. Part AF details the requirements for the UL Certification Mark which is not controlled by the technical standard used to investigate these products. Products are permitted to bear only the Certification Mark(s) corresponding to the countries for which it is certified, as indicated in each Test Report.

Product Description

The equipment is a modular ac to dc power supply for building-in. The power supply consists of an input power platform and various plug-in Output Modules. Each plug-in Output Module is 1 or 2 slot width.

Model Differences

All models provided with a power platform and maybe provided with various combinations of Output Modules.

M3-MMMM-FFF-OO, M4MMMM-FFF-OO, M5-MMMM-FFF-OO (Where MM can be a combination of R, S, T, U or blank and a number 1-11, F, G, Z or blank, designating Module type; where F can be a combination of a letter E,F,M or blank an any number 3-5 or blank, designating Fan Assembly type: where O can be any number 0-9; dashes optional in model designation, "-" provided optionally)

Fan Assembly suffix FE3, FE4, FE5 models provided with an Appliance Inlet or Terminal Block.

See output rating table provided below.

Output Rating:

M3 Series: Max 250 W: up to 2 output modules provided.

M4 Series: Max 350 W: up to 2 output modules provided.

M5 Series: Max 450 W: up to 2 output modules provided.

Output Module Ratings (DC Voltage only):

Module SX Series, where X = 1-5, F, G, or Z:

S1: 2.5 V @ 50 A

S2: 3.3 V @ 50 A

S3: 5.0 V @ 50 A

S4: 12.0 V @ 20 A

S5: 15.0 V @ 17 A

SF: 8.0 V @ 31 A

SG: 10.0 V @ 25 A

SZ: 1.8 V @ 50 A

Module S@ Series, where @ = 6-9

S6: 24.0 V @ 10 A

S7: 28.0 V @ 9 A

S8: 36.0 V @ 7 A

S9: 48.0 V @ 5 A

Module UX Series, where X = 1-8:

U1: 5.0 V @ 40 A; 5.0 V @ 4.0 A

U2: 5.0 V @ 40 A; 12.0 V @ 4.0 A

U3: 5.0 V @ 40 A; 15.0 V @ 4.0 A

U4: 5.0 V @ 40 A; 24.0 V @ 2.5 A

U5: 3.3 V @ 40 A; 5.0 V @ 4.0 A

U6: 3.3 V @ 40 A; 12.0 V @ 4.0 A

U7: 3.3 V @ 40 A; 15.0 V @ 4.0 A

U8: 3.3 V @ 40 A; 24.0 V @ 2.5 A

Module RX Series, where X = 1-6:

R1: 12.0 V @ 6 A; 12.0 V @ 6.0 A
R2: 15.0 V @ 5 A; 15.0 V @ 5.0 A
R4: 5.0 V @ 8 A; 24.0 V @ 3.0 A
R5: 12.0 V @ 6 A; 24.0 V @ 3.0 A
R6: 5.0 V @ 8 A; 12.0 V @ 6.0 A

Module TX Series, where X = 1-11:

T1: 5.0 V @ 20 A; 12.0 V @ 4.0 A; 12.0 V @ 4 A
T2: 5.0 V @ 20 A; 15.0 V @ 3.0 A; 15.0 V @ 3 A
T3: 3.3 V @ 20 A; 12.0 V @ 4.0 A; 12.0 V @ 4 A
T4: 3.3 V @ 20 A; 15.0 V @ 3.0 A; 15.0 V @ 3 A
T6: 12.0 V @ 10 A; 12.0 V @ 4.0 A; 5.0 V @ 4 A
T7: 24.0 V @ 4 A; 15.0 V @ 3.0 A; 5.0 V @ 3 A
T8: 5.0 V @ 20 A; 12.0 V @ 4.0 A; 5.0 V @ 4 A
T9: 24.0 V @ 4 A; 15.0 V @ 4.0 A; 5.0 V @ 4 A
T10: 12.0 V @ 10 A; 12.0 V @ 4.0 A; 15.0 V @ 3 A
T11: 24.0 V @ 4 A; 5.0 V @ 4.0 A; 5.0 V @ 4 A

Technical Considerations

- § Classification of installation and use : For building-in
- § Device type (component/sub-assembly/ equipment/ system) : Component
- § Intended use (Including type of patient, application location) : Provide regulated power
- § Mode of operation : Continuous
- § Supply connection : For building-in
- § Accessories and detachable parts included : None
- § Other options include : None
- § The product was investigated to the following additional standards:: ANSI/AAMI ES60601-1 (2005 + C1:09 + A2:10) (Medical Electrical Equipment - Part 1: General Requirements for Basic Safety and Essential Performance) (includes Deviations for United States), CAN/CSA-C22.2 No. 60601-1 (2008) (Medical Electrical Equipment - Part 1: General Requirements for Basic Safety and Essential Performance) (includes National Differences for Canada), EN 60601-1: 2006 + CORR: 2010 (Medical electrical equipment Part 1: General requirements for basic safety and essential performance)
- § The product was not investigated to the following standards or clauses:: Biocompatibility (ISO 10993-1), Clause 14, Programmable Electronic Systems, Electromagnetic Compatibility (IEC 60601-1-2)
- § The degree of protection against harmful ingress of water is:: Ordinary

- § The mode of operation is:: Continuous
- § The product is suitable for use in the presence of a flammable anesthetics mixture with air or oxygen or with nitrous oxide:: No
- § The power supplies were evaluated for use in 50°C ambient at Full Rated Output and 50% of the Rated Output in 70°C ambient. See Enclosure - Miscellaneous 7-02.
- § Scope of Power Supply evaluation defers the following clauses to the be determined as part of the end product: Clause 7.5 (Safety Signs), Clause 7.9 (Accompanying Documents), Clause 9 (ME Hazard), Clause 10(Radiation), Clause 14 (PEMS), Clause 16 (ME Systems)
- § Scope of Power Supply evaluation excludes the following: Patient applied parts clauses: 4.6, 7.2.10, 8.3, 8.5.2, 8.5.5, 8.7.4.7-8.7.4.9, 8.9.1.15; Battery related clauses: 7.3.3, 15.4.3; Hand Control related clauses: 8.10.4; Oxygen related clauses: 11.2.2; Fluids related clauses: 11.6.2 – 11.6.4; Sterilization clause: 11.6.7; Biocompatibility Clause: 11.7 (ISO 10993); Motor related clauses: 13.2.13.3, 13.4; Heating Elements related clause: 13.2; Flammable Anaesthetic Mixtures Protection: Annex G

Engineering Conditions of Acceptability

For use only in or with complete equipment where the acceptability of the combination is determined by UL LLC. When installed in an end-product, consideration must be given to the following:

- § The component shall be considered for compliance with the Marking (clause 7) and Separation (clause 8) requirements as part of the end use application evaluation.
- § This power supply was evaluated with Two MOPP between Primary and Secondary; One MOPP primary and Earth.
- § This power supply has been evaluated as a continuous operation, ordinary equipment and has not been evaluated for use in the presence of a flammable anesthetic mixture with air, oxygen, or nitrous oxide. The output circuits have not been evaluated for direct patient connection (Type B, BF or CF).
- § The end product shall ensure that the requirements related to accompanying documents, clause 7.9, are met.
- § The available voltage for the secondary outputs does not exceed 25 Vac or 60 Vdc, under normal and single fault conditions.
- § The following secondary output circuits are at hazardous energy levels: All outputs
- § Connectors are suitable for factory wiring only.
- § The Dielectric Strength Test conducted on this power supply was based upon a maximum working

voltage of: For Platform: Primary-Earthed Dead Metal: 412 Vpk, 316 Vrms; Primary-Secondary: 680 Vpk, 240 Vrms; For Modules: Primary-Earthed Dead Metal: 425 Vpk, 318 Vrms; Primary-Secondary: 603 Vpk, 252 Vrms.

- § Chassis shall be suitably earthed as part of the end product.
- § The following magnetic devices (e.g. transformers or inductor) are provided with an OBJY2 insulation system with the indicated rating greater than Class A (105°C): Platform: T1; Output Modules:T1, T2, and T3 (Class F, 155°C)
- § Printed Wiring Board rated 130°C.
- § Cleaning test shall be considered as part of end product evaluation.
- § The need for Marking Durability and Marking Legibility Testing shall be considered as part of the end product installation.
- § Fire/ Mechanical/ Electrical Enclosure to be provided as part of the end product.
- § The products were tested on a 20 A branch circuit. If used on a branch circuit greater than this, additional testing may be necessary.
- § Input terminal blocks, when provided, are suitable for No. 12-22 AWG, CU.
- § Power Supply Models provided with Fan Assembly suffix FE3, FE4, FE5 shall provide a series fuse on the neutral side of the power supply in the end-product. Fuses shall be rated min. 250V, F5A for Fan Assembly suffix FE3; min. 250V, F6.3A for Fan Assembly suffix FE4 models; min. 250V, F10A for Fan Assembly suffix FE5.
- § Platform was provided with an automatic resetting thermal cut-out that operated under abnormal cooling, but was not considered relied upon for safety. End product Risk Management to consider acceptability of risk associated with the use of an automatic resetting thermal cut-out.
- § Appliance Inlet, when provided, does not form the supply connection to ME Equipment.
- § Repeat of leakage current testing and consideration of non-frequency weighted leakage shall be considered as part of the end product.
- § Temperature, Protective Earthing, Dielectric Voltage Withstand, and Interruption of the Power Supply tests shall be considered as part of the end product evaluation.
- § Consideration shall be given to measuring the temperature on power electronic components and transformer windings when the power supply is installed in the end-use equipment. The end-use

product shall ensure that the power supply is used within its ratings.

§ The maximum continuous power supply output for Models M3: 250 Watts; M4: 350 Watts; M5: 450 Watts relied on forced air cooling from two 1.32 W fans at 13.24 cfm applied to the input side of the power supply, 2.5 cm from power supply mains.

Additional Information

Nameplate marking provided is considered representative of the series.



IEC certificates for components older than 3 years maybe included in Licenses Enclosure. Manufacturer to provide updated licenses upon NCB's request.

When submitting this Test Report to other Certification Body, the manufacturer is responsible for providing any additional information that the Body may need in order to issue its Mark, including testing for compliance with the applicable collateral standards.

Additional Standards

The product fulfills the requirements of: ANSI/AAMI ES60601-1 (2005 + C1:09 + A2:10), CAN/CSA-C22.2 No. 60601-1 (2008), IEC 60601-1: 2005, EN 60601-1: 2006 + CORR: 2010

Markings and instructions

Clause Title	Marking or Instruction Details
Model	Model number
Company identification	Classified or Recognized company's name, Trade name, Trademark or File
Supply Connection	Voltage range, ac/dc, phases if more than single phase
Alternating current	
Supply Frequency	Rated frequency range in hertz
Power Input	Amps, VA, or Watts
Output	Rated output voltage, power, frequency.
Protective earth ground	

Special Instructions to UL Representative

The M Series Platforms and Modules are manufactured at the following location (Factory ID):

K (100101-437)

The "Modules" and "Platforms" are marked with the Split Inspection Marking described below and may be

shipped to FS (407169-001) or K (100101-437) for final assembly:

SPLIT INSPECTION MARKING FOR MODULES AND PLATFORMS: as indicated as specified as part of Special Inspection Instructions for Vol. X1

The Split Inspection Marking is applied to the components that are manufactured only at K.

Production-Line Testing Requirements			
Test Exemptions - The following models are exempt from the indicated test			
Model	Grounding Continuity	Dielectric Voltage Withstand	Patient Circuit Dielectric Voltage Withstand
All Platform Models	Test	Test	Exempt
All Output Modules	Test	Test	Exempt
Solid-State Component Test Exemptions - The following solid-state components may be disconnected from the remainder of the circuitry during either Dielectric Voltage Withstand Test:			
Component			
N/A			
Sample and Test Specifics for Follow-Up Tests at UL			
The following tests shall be conducted in accordance with the Generic Inspection Instructions			
Plastic Enclosure or Part	Test	Sample(s)	Test Specifics
N/A			

CERTIFICATE OF COMPLIANCE

Certificate Number 20130429-E139109
Report Reference E139109-A63-UL
Issue Date 2013-APRIL-29

Issued to: XP POWER L L C
SUITE 150 1241 E DYER RD SANTA ANA CA 92705
UNITED STATES



This is to certify that representative samples of Power Supplies for Information Technology Equipment Including Electrical Business Equipment
See Addendum Page

Have been investigated by UL in accordance with the Standard(s) indicated on this Certificate.

Standard(s) for Safety: UL 60950-1, (Information Technology Equipment - Safety - Part 1: General Requirements)
CSA C22.2 No. 60950-1-07, (Information Technology Equipment - Safety - Part 1: General Requirements)

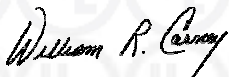
Additional Information: See the UL Online Certifications Directory at www.ul.com/database for additional information

Only those products bearing the UL Recognized Component Marks for the U.S. and Canada should be considered as being covered by UL's Recognition and Follow-Up Service and meeting the appropriate U.S. and Canadian requirements.

The UL Recognized Component Mark for the U.S. generally consists of the manufacturer's identification and catalog number, model number or other product designation as specified under "Marking" for the particular Recognition as published in the appropriate UL Directory. As a supplementary means of identifying products that have been produced under UL's Component Recognition Program, UL's Recognized Component Mark: , may be used in conjunction with the required Recognized Marks. The Recognized Component Mark is required when specified in the UL Directory preceding the recognitions or under "Markings" for the individual recognitions. The UL Recognized Component Mark for Canada consists of the UL Recognized Mark for Canada:  and the manufacturer's identification and catalog number, model number or other product designation as specified under "Marking" for the particular Recognition as published in the appropriate UL Directory.

Recognized components are incomplete in certain constructional features or restricted in performance capabilities and are intended for use as components of complete equipment submitted for investigation rather than for direct separate installation in the field. The final acceptance of the component is dependent upon its installation and use in complete equipment submitted to UL LLC.

Look for the UL Recognized Component Mark on the product.



William R. Carney, Director, North American Certification Programs

UL LLC

Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL. For questions, please contact a local UL Customer Service Representative at www.ul.com/contactus

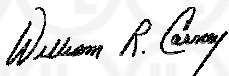


CERTIFICATE OF COMPLIANCE

Certificate Number 20130429-E139109
Report Reference E139109-A63-UL
Issue Date 2013-APRIL-29

This is to certify that representative samples of the product as specified on this certificate were tested according to the current UL requirements.

Switching Power Supply Series- P3-MMMM-FFF-OO, P4-MMMM-FFF-OO, P5-MMMM-FFF-OO
(Where dashes are optional in model designation; where M can be a combination of a letter R to U and a number 1-10, F, G, or Z; where F can be a combination of the letter E, F or T and any number 0-9 or blank; where O can be any number 0-9 or blank designating parallel option.)



William R. Carney, Director, North American Certification Programs

UL LLC

Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL. For questions, please contact a local UL Customer Service Representative at www.ul.com/contactus



UL TEST REPORT AND PROCEDURE

Standard:	UL 60950-1, 2nd Edition, 2011-12-19 (Information Technology Equipment - Safety - Part 1: General Requirements) CSA C22.2 No. 60950-1-07, 2nd Edition, 2011-12 (Information Technology Equipment - Safety - Part 1: General Requirements)
Certification Type:	Component Recognition
CCN:	QQGQ2, QQGQ8 (Power Supplies for Information Technology Equipment Including Electrical Business Equipment)
Product:	Switching Power Supply Series
Model:	P3-MMMM-FFF-OO, P4-MMMM-FFF-OO, P5-MMMM-FFF-OO (Where dashes are optional in model designation; where M can be a combination of a letter R to U and a number 1-10, F, G, or Z; where F can be a combination of the letter E, F or T and any number 0-9 or blank; where O can be any number 0-9 or blank designating parallel option.)
Rating:	Input rated: P3-MMMM-FFF-OO: 100-240 Vac, 50/60 Hz, 3.4 A P4-MMMM-FFF-OO: 100-240 Vac, 50/60 5.5 A P5-MMMM-FFF-OO: 100-240 Vac, 50/60 Hz, 7.3 A Output rated: See model differences for details.
Applicant Name and Address:	XP POWER L L C SUITE 150 1241 E DYER RD SANTA ANA CA 92705 UNITED STATES

This is to certify that representative samples of the products covered by this Test Report have been investigated in accordance with the above referenced Standards. The products have been found to comply with the requirements covering the category and the products are judged to be eligible for Follow-Up Service under the indicated Test Procedure. The manufacturer is authorized to use the UL Mark on such products which comply with this Test Report and any other applicable requirements of UL LLC ('UL') in accordance with the Follow-Up Service Agreement. Only those products which properly bear the UL Mark are considered as being covered by UL's Follow-Up Service under the indicated Test Procedure.

The applicant is authorized to reproduce the referenced Test Report provided it is reproduced in its entirety.

UL authorizes the applicant to reproduce the latest pages of the referenced Test Report consisting of the first page of the Specific Technical Criteria through to the end of the Conditions of Acceptability.

Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL.

Issue Date: 2011-05-13
2013-04-26

Page 2 of 41

Report Reference #

E139109-A63-UL

Prepared by: Timothy Geiger

Reviewed by: Luis Martinez

Supporting Documentation

The following documents located at the beginning of this Procedure supplement the requirements of this Test Report:

- A. Authorization - The Authorization page may include additional Factory Identification Code markings.
- B. Generic Inspection Instructions -
 - i. Part AC details important information which may be applicable to products covered by this Procedure. Products described in this Test Report must comply with any applicable items listed unless otherwise stated in the body of this Test Report.
 - ii. Part AE details any requirements which may be applicable to all products covered by this Procedure. Products described in this Test Report must comply with any applicable items listed unless otherwise stated in the body of each Test Report.
 - iii. Part AF details the requirements for the UL Certification Mark which is not controlled by the technical standard used to investigate these products. Products are permitted to bear only the Certification Mark(s) corresponding to the countries for which it is certified, as indicated in each Test Report.

Product Description

The equipment is a modular ac to dc power supply for building-in. The power supply consists of an input power platform and various plug-in Output Modules. Each plug-in Output Module is 1 or 2 slot width.

Model Differences

All models provided with a power platform and maybe provided with various combinations of Output Modules.

Model P3 and P4 Series are similar to the P5 Series with exception to the output wattage rating. See output rating table provided below.

Output Rating:

P3 Series: Max 250 W: up to 2 output modules provided.
P4 Series: Max 350 W: up to 2 output modules provided.
P5 Series: Max 450 W: up to 2 output modules provided.

Output Module Ratings (DC Voltage only):

Module SX Series, where X = 1-5, F, G, or Z:

SZ: 1.8 V @ 50 A
S1: 2.5 V @ 50 A
S2: 3.3 V @ 50 A
S3: 5.0 V @ 50 A
SF: 8.0 V @ 31 A
SG: 10.0 V @ 25 A
S4: 12.0 V @ 20 A
S5: 15.0 V @ 17 A

Module S@ Series, where @ = 6-9

S6: 24.0 V @ 10 A
S7: 28.0 V @ 9 A
S8: 36.0 V @ 7 A
S9: 48.0 V @ 5 A

Module UX Series, where X = 1-8:

U5: 3.3 V @ 40 A; 5.0 V @ 4.0 A
U6: 3.3 V @ 40 A; 12.0 V @ 4.0 A
U7: 3.3 V @ 40 A; 15.0 V @ 4.0 A
U8: 3.3 V @ 40 A; 24.0 V @ 2.5 A
U1: 5.0 V @ 40 A; 5.0 V @ 4.0 A
U2: 5.0 V @ 40 A; 12.0 V @ 4.0 A
U3: 5.0 V @ 40 A; 15.0 V @ 4.0 A
U4: 5.0 V @ 40 A; 24.0 V @ 2.5 A

Module RX Series, where X = 1-6:

R6: 5.0 V @ 8 A; 12.0 V @ 6.0 A
R4: 5.0 V @ 8 A; 24.0 V @ 3.0 A
R1: 12.0 V @ 6 A; 12.0 V @ 6.0 A
R5: 12.0 V @ 6 A; 24.0 V @ 3.0 A
R2: 15.0 V @ 5 A; 15.0 V @ 5.0 A

Module TX Series, where X = 1-11:

T3: 3.3 V @ 20 A; 12.0 V @ 4.0 A; 12.0 V @ 4 A
T4: 3.3 V @ 20 A; 15.0 V @ 3.0 A; 15.0 V @ 3 A
T1: 5.0 V @ 20 A; 12.0 V @ 4.0 A; 12.0 V @ 4 A
T2: 5.0 V @ 20 A; 15.0 V @ 3.0 A; 15.0 V @ 3 A
T8: 5.0 V @ 20 A; 12.0 V @ 4.0 A; 5.0 V @ 4 A
T6: 12.0 V @ 10 A; 12.0 V @ 4.0 A; 5.0 V @ 4 A
T10: 12.0 V @ 10 A; 12.0 V @ 4.0 A; 15.0 V @ 3 A
T11: 24.0 V @ 4 A; 5.0 V @ 4.0 A; 5.0 V @ 4 A
T9: 24.0 V @ 4 A; 15.0 V @ 4.0 A; 5.0 V @ 4 A
T7: 24.0 V @ 4 A; 15.0 V @ 3.0 A; 5.0 V @ 3 A

Technical Considerations

- Equipment mobility : for building-in
- Connection to the mains : To be determined in the end system
- Operating condition : continuous
- Access location : operator accessible
- Over voltage category (OVC) : OVC II
- Mains supply tolerance (%) or absolute mains supply values : +10%, -10%
- Tested for IT power systems : No
- IT testing, phase-phase voltage (V) : N/A
- Class of equipment : Class I (earthed)
- Considered current rating of protective device as part of the building installation (A) : 20 A
- Pollution degree (PD) : PD 2
- IP protection class : IP X0
- Altitude of operation (m) : 3000
- Altitude of test laboratory (m) : 250
- Mass of equipment (kg) : max. 1.2 kg
- The product was submitted and evaluated for use at the maximum ambient temperature (Tma)

permitted by the manufacturer's specification of: The product was submitted and tested for use at the maximum ambient temperature (T_{ma}) permitted by the manufacturer's specification of: Full-rated output load: 50°C. 75% of output load: 60°C. Half-rated output load: 70°C.

- The means of connection to the mains supply is: For building-in
- The product is intended for use on the following power systems: TN
- The equipment disconnect device is considered to be: determined in the end product.
- The product was investigated to the following additional standards: EN 60950-1:2006 + A11:2009 + A12:2010 + A12:2011 (which includes all European national differences, including those specified in this test report).
- Altitude and Clearances: IEC 60664-1:1992, Table A.2, was applied to evaluate the operation of the product at 3048 m (10000 ft) above sea level.

Engineering Conditions of Acceptability

For use only in or with complete equipment where the acceptability of the combination is determined by UL LLC. When installed in an end-product, consideration must be given to the following:

- The following Production-Line tests are conducted for this product: Electric Strength, Earthing Continuity
- The end-product Electric Strength Test is to be based upon a maximum working voltage of: Primary-Earthed Dead Metal: 240 Vrms, Platform: Primary-SELV: 240 Vrms, 680 Vpk, Modules: Primary-SELV: 252 Vrms, 603 Vpk
- The following secondary output circuits are SELV: All outputs
- The following secondary output circuits are at hazardous energy levels: All outputs.
- The power supply terminals and/or connectors are: Suitable for factory wiring only
- The maximum investigated branch circuit rating is: 20 A
- The investigated Pollution Degree is: 2
- Proper bonding to the end-product main protective earthing termination is: Required
- An investigation of the protective bonding terminals has: Not been conducted
- The following input terminals/connectors must be connected to the end-product supply neutral: Terminal marked "N" on the supply connector
- The following magnetic devices (e.g. transformers or inductor) are provided with an OBJY2 insulation system with the indicated rating greater than Class A (105°C): Platform: T1, Modules: T1, T2, and T3 (Class F)
- The following end-product enclosures are required: Fire, Mechanical
- The equipment is suitable for direct connection to: AC mains supply
- Printed Wiring Boards rated min. V-1, 130°C.
- The supply terminal is suitable for factory wiring. The output terminals and/or connectors have not been investigated for field wiring. Terminal block (J1) is suitable for copper wire only, 22-14 AWG, 10 lb. torque, 110°C.
- Repeat of Temperature and Leakage Tests should be considered as part of the end product.
- Earthing test was conducted at 30A. Consideration for the need of repeating the earthing test at 40A should be done as part of the end product evaluation.
- Humidity testing to be considered as part of end product evaluation.
- Compliance with clause 3.4 to be considered during an end product evaluation when an appliance

inlet is not provided.

Additional Information

This report is a reissue of CBTR Ref. No.: E139109-A63-CB-1, CB Test Certificate Ref. No. US-17079-UL, issued 2011-05-16 to upgrade the report to IEC 60950-1 2nd Ed. Am1. Based on the current test record, previously conducted testing, and the review of product technical documentation including photos, schematics, wiring diagrams and similar, it has been determined that the product continues to comply with the standard.

Samples were not considered necessary under this investigation since there were no declared modifications to the product since the last testing; and construction analysis to verify compliance with the new standard was completed based on the review of the product technical documentation including existing CBTR, previous and new photos, schematics, wiring diagrams and similar, and in all cases, the verification of critical components was completed based on documentation. All required tested were carried out under the original investigation.

The unit was evaluated to be operated up to 3048 m (10,000 feet) above sea level and the multiplication factor (1.15) of table A.2 of IEC 60664-1:1992+A1: 2000+A2: 2002 was applied to determine the minimum required clearance.

Labels provided are considered representative of the entire series.

Manufacturer to provide updated component licenses if necessary to NCB upon request.

Additional Standards

The product fulfills the requirements of: EN 60950-1:2006 + A1:2010 + A11:2009 + A12:2011

Markings and instructions

Clause Title	Marking or Instruction Details
Power rating - Ratings	Ratings (voltage, frequency/dc, current)
Power rating - Company identification	Listee's or Recognized company's name, Trade Name, Trademark or File Number
Power rating - Model	Model Number
Fuses - Non-operator access/soldered-in fuses	Unambiguous reference to service documentation for instructions for replacement of fuses replaceable only by service personnel
Terminals for external primary power supply conductors	Capital letter "N" located adjacent to a terminal intended exclusively for connection of the primary power neutral conductor
Warning to service personnel	"CAUTION: Double pole/neutral fusing"

1.7.7.1 Protective Bonding Marking	Protective bonding terminal is marked with either the earth symbol (60417-2-IEC-5017) near the terminal or not provided.
------------------------------------	--

Special Instructions to UL Representative

The "Modules" and "Platforms" are manufactured at the following locations (Factory ID):

K (100101-437)
F (389459-001)

The "Modules and "Platforms" are marked with the Split Inspection Marking described below and may be shipped to FS (407169-001) or F (389459-001) for final assembly:

SPLIT INSPECTION MARKING FOR MODULES AND PLATFORMS: "Made in China" or as indicated as specified as part of Special Inspection Instructions for Vol. X1

The Split Inspection Marking is applied to the components that are manufactured only at K and F.

Production-Line Testing Requirements

Electric Strength Test Special Constructions - Refer to Generic Inspection Instructions, Part AC for further information.

Model	Component	Removable Parts	Test probe location	V rms	V dc	Test Time, s
Output Modules	T1-T3	-	Primary Secondary	300 0	4242	1
All Models - Platforms	T1	-	Primary Secondary	300 0	4242	1

Earthing Continuity Test Exemptions - This test is not required for the following models:

All Modules

Electric Strength Test Exemptions - This test is not required for the following models:

-

Electric Strength Test Component Exemptions - The following solid-state components may be disconnected from the remainder of the circuitry during the performance of this test:

-

Sample and Test Specifics for Follow-Up Tests at UL

Model	Component	Material	Test	Sample(s)	Test Specifics
N/A					